

**Workgroup Consultation Response Proforma****GC0137: Minimum Specification Required for Provision of GB Grid Forming (GBGF) Capability (formerly Virtual Synchronous Machine/VSM Capability)**

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses to [grid.code@nationalgrideso.com](mailto:grid.code@nationalgrideso.com) by 5pm on **30 April 2021**. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

If you have any queries on the content of this consultation, please contact Kavita Patel [Kavita.patel@nationalgrideso.com](mailto:Kavita.patel@nationalgrideso.com) or [grid.code@nationalgrideso.com](mailto:grid.code@nationalgrideso.com)

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**For reference the Applicable Grid Code Objectives are:**

- To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity*
- Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);*
- Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole;*
- To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and*
- To promote efficiency in the implementation and administration of the Grid Code arrangements*

Please express your views regarding the Workgroup Consultation in the right-hand side of the table below, including your rationale.

Standard Workgroup Consultation questions		
1	Do you believe that the GC0141 Original	Yes

Commented [TB1]: Shouldn't that be GC0137?

	Proposal better facilitates the Applicable Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Yes please find them in the table below, referring to the legal Text (Annex 10)
4	Do you wish to raise a Workgroup Consultation Alternative Request for the Workgroup to consider?	No
<b>Modification Specific Workgroup Consultation questions</b>		
5	Do you believe it is appropriate specify GB Grid Forming as a non-mandatory requirement in the Grid Code and be accessed by future market arrangements rather than as a mandatory requirement?	Yes
6	Do you believe the current proposal is sufficiently flexible and facilitates a range of technologies? If not, please state why you feel this to be the case and what type of technologies have been excluded?	Yes
7	Do you believe the proposal will result in excessive equipment costs? This excludes development costs whilst recognising plant can be also be de-loaded?	For Storage Systems the costs are assumed to be moderate, depending on overload capability needed at the end in the market. For PV we expect additional costs due to storage needed, that depend strongly on the finally plant specific requirements.
8	Do you believe the proposed Grid Code proposals sit better in the Planning Code, Connection Conditions / European Connection Conditions and Compliance Processes / European Compliance Processes bearing in	It's fine as it is proposed

mind the proposals are non-mandatory or do you think it would be better to have a new standalone section	
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Page No	Line No	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
2				General	The term "real power" is mentioned several times. Shouldn't it be active power? That's what the Grid Code usually uses.	Use Active Power instead of Real Power throughout the Text	
8		ECC.6.3. 19.3 (v) e)		General	ECC 6.3.13 stipulates a withstand capability of different values for different applications, but each with a different evaluation / measurement time window. This measurement window should be defined here for clarification (e.g. 0.5s or 1s).  The term "withstand setting" is still misleading (see our comment SMA_03 from January 2021)	The second sentence opens the form and structure of the model, so it would be good to give already a signal in the first sentence that Fig. ECC.6.3.19.3.2 (a) and (b) are just examples and do not have to be met exactly, in order to cover manufacturer specific control structures.	

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		ECC.6.3. 19.3 (vii)	2 <sup>nd</sup> paragrap h		Change sentence to: "Each <b>GBGF-I-Plant</b> when connected and synchronised to the <b>System</b> , shall be capable of withstanding without tripping a rate of change of <b>Frequency</b> up to and including 2 Hz per second as measured over the previous 1 second period .	[...] which should be in the general form shown exemplary in Figure [...]	
			Figure ECC.6. 3.19.3.2		The text says, there may be totally different forms.	Add "exemplary" or "preferred" to the beginning for the avoidance of doubt.	
		ECP.A.3. 9.2	d)		Shouldn't this be a „Nicholls Chart“?		